

APPENDIX III

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```

ld++
if ($3 == "[%fp,") {
#   ld fpa[$4]++
ldfp++
5   if (($4+0) >= -32 && ($4+0) <= -4) {
ldfp32++
nxtc()
}
nxt()
10  }
if ($3 == "[%sp,") {
#   ld spa[$4]++
ldsp++
nxt()
15  }
if ($3 == "[%gp,") {
ldgp++
nxtc()
}
20  if ($3 ~ reg) {
#   ld ra[$4]++
ldr++
if ($3 ~ /\]/ || ($4 ~ /^[0-9]/ && ($4+0) >= 0 && ($4+0) < 64)) {
25   ldr64++
nxtc()
}
if (pete) {
if ($3 ~ /\]/ || ($3 ~ reg01 && ($4 ~ /^[0-9]/ && ($4+0) >= 0 && ($4+0) <
30  128))) {
ldr64p++
nxtc()
}
if ($3 ~ /\]/ || ($3 ~ reg23 && ($4 ~ /^[0-9]/ && ($4+0) >= 0 && ($4+0) <
35  64))) {
ldr64p++
nxtc()
}
if ($3 ~ /\]/ || ($3 ~ reg1316 && ($4 ~ /^[0-9]/ && ($4+0) >= 0 && ($4+0) <
40  32))) {
ldr64p++
nxtc()
}
}
if ($4 ~ reg) {
45   ldabc++
nxtc()
}
nxt()
}
50  }
nxt()
}
$1 == "ldw" {
if ($2 ~ reg) {
55   ldw++
if ($3 == "[%fp,") {
ldwfp++
if (($4+0) >= -32 && ($4+0) <= -4) {
60   ldwfp32++
nxtc()
}
}
nxt()
}
}

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    if ($3 == "[%sp,") {
      ldwsp++
      nxt()
    }
5   if ($3 == "[%gp,") {
      ldwgp++
      nextc()
    }
10  if ($3 ~ reg) {
      ldwr++
      if ($3 ~ /\]/ || ($4 ~ /^[0-9]/ && ($4+0) >= 0 && ($4+0) < 32)) {
        ldwr32++
        nextc()
      }
15  if ($4 ~ reg) {
      ldwabc++
      nxt()
    }
    next()
20  }
  }
  next()
}
$1 == "ldb" {
25  if ($2 ~ reg) {
      ldb++
      if ($3 == "[%fp,") {
        ldbfp++
        if (($4+0) >= -32 && ($4+0) <= -4) {
30        ldbfp32++
          nextc()
        }
      }
      next()
    }
35  if ($3 == "[%sp,") {
      ldbsp++
      nextc()
    }
    if ($3 == "[%gp,") {
40    ldbgp++
      nextc()
    }
    if ($3 ~ reg) {
      ldbr++
45    if ($3 ~ /\]/ || ($4 ~ /^[0-9]/ && ($4+0) >= 0 && ($4+0) < 16)) {
        ldbr16++
        nextc()
      }
    }
    if ($4 ~ reg) {
50    ldbabc++
      nextc()
    }
    next()
  }
55  }
  next()
}
/st.%blink, "[%sp, 4\]/ {
  stblink++
60  nextc()
}
$1 == "st" {
  if ($2 ~ reg) {

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st++
if ($3 == "[%fp,") {
#   stfpa[$4]++
stfp++
5   if (($4+0) >= -32 && ($4+0) <= -4) {
      stfp32++
      nextc()
    }
    next()
10  }
    if ($3 == "[%sp,") {
#   stspa[$4]++
stsp++
15  }
    next()
    if ($3 == "[%gp,") {
stgp++
    next()
    }
20  if ($3 ~ reg) {
#   stra[$4]++
str++
    if ($3 ~ /\]/ || ($4 ~ /^[0-9]/ && ($4+0) >= 0 && ($4+0) < 64)) {
25  str64++
      nextc()
    }
    next()
    }
30  }
    next()
}
$1 == "stw" {
if ($2 ~ reg) {
stw++
35  if ($3 == "[%fp,") {
#   stwfpa[$4]++
stwfp++
    if (($4+0) >= -32 && ($4+0) <= -4) {
40  stwfp32++
      nextc()
    }
    next()
    }
    if ($3 == "[%sp,") {
45  #   stwspa[$4]++
stwsp++
      nextc()
    }
    if ($3 == "[%gp,") {
50  stwgp++
      nextc()
    }
    if ($3 ~ reg) {
#   stwra[$4]++
stwr++
55  if ($3 ~ /\]/ || ($4 ~ /^[0-9]/ && ($4+0) >= 0 && ($4+0) < 16)) {
      stwr16++
      nextc()
    }
    next()
60  }
    }
}
next()

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    if ($4 ~ regh) {
        cmprh++
        nextc()
    }
5   }
    if ($3 ~ regh) {
        if ($4 ~ reg) {
            cmphr++
            nextc()
10        }
        }
        next()
    }
15   $1 == "sub.ne" {
        if ($2 == $3 && $2 == ($4 ",")) {
            if ($4 ~ reg && $2 ~ reg && $3 ~ reg) {
                subneaaa++
                nextc()
20            }
        }
        next()
    }
25   $1 == "sub.eq" {
        if ($2 == $3 && $2 == ($4 ",")) {
            if ($4 ~ reg && $2 ~ reg && $3 ~ reg) {
                subeqaaa++
                nextc()
30            }
        }
        next()
    }
    $1 == "asl" {
        if ($4 ~ /^-?[0-9]/) {
35            asli++
            if ($2 == $3) {
                # aslia[$4]++
                if ($3 ~ reg) {
                    if ($4 >= 1 && $4 <= 8) {
40                        asli8++
                    }
                    if ($4 >= 1 && $4 < 32) {
                        asli32++
                    }
45                    nextc()
                }
            }
            if ($2 ~ reg) {
                if ($3 ~ reg && $4 >= 2 && $4 < 3) {
50                    aslab2++
                    nextc()
                }
            }
            next()
60        }
        if ($4 ~ reg && $2 ~ reg && $3 ~ reg) {
            aslaab++
            nextc()
        }
        if ($2 ~ reg && $3 ~ reg && $4 !~ reg) {
            aslab1++
            nextc()
        }
    }

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}
$1 == "asr" {
  if ($4 ~ /^-?[0-9]/) {
    asri++
5    if ($2 == $3) {
      # asria[$4]++
      if ($3 ~ reg) {
        if ($4 >= 1 && $4 <= 8) {
10        asri8++
        }
        if ($4 >= 1 && $4 < 32) {
          asri32++
        }
        nextc()
15      }
    }
    if ($2 ~ reg) {
      if ($3 ~ reg && $4 >= 2 && $4 < 3) {
        asrab2++
20      nextc()
      }
    }
    next()
  }
  if ($4 ~ reg && $2 ~ reg && $3 ~ reg) {
    asraab++
    nextc()
  }
  if ($2 ~ reg && $3 ~ reg && $4 !~ reg) {
30    asrab1++
    nextc()
  }
}
$1 == "lsr" {
35  if ($4 ~ /^-?[0-9]/) {
    lsri++
    if ($2 == $3) {
      # lsria[$4]++
      if ($3 ~ reg) {
        if ($4 >= 1 && $4 <= 8) {
40        lsri8++
        }
        if ($4 >= 1 && $4 < 32) {
          lsri32++
45        }
        nextc()
      }
    }
    if ($2 ~ reg) {
50    if ($3 ~ reg && $4 >= 2 && $4 < 3) {
      lsrab2++
      nextc()
    }
  }
  next()
}
  if ($4 ~ reg && $2 ~ reg && $3 ~ reg) {
    lsraab++
    nextc()
60  }
  if ($2 ~ reg && $3 ~ reg && $4 !~ reg) {
    lsrab1++
    nextc()
  }
}

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    }
}
$1 == "mul64" {
5   if ($2 == "0,") {
    if ($4 ~ /^-?[0-9]/) {
        muli++
    #   mulia[$4]++
      if ($3 ~ reg) {
10      if ($4 >= 0 && $4 < 32) {
        muli32++
        nextc()
      }
    }
  }
15  if ($3 ~ reg && $4 ~ reg) {
    mul0ab++
    nextc()
  }
}
20  next()
}
$1 == "and.f" {
    if ($2 == "0,") {
25    if ($4 ~ /^-?[0-9]/) {
        andfi++
    #   andfia[$4]++
      if ($3 ~ reg) {
        if ($4 >= 0 && $4 < 32) {
30      andfi32++
        nextc()
      }
    }
  }
35  if ($3 ~ reg && $4 ~ reg) {
    andfab++
    nextc()
  }
}
40  next()
}
$1 == "and" {
    if ($2 == $3 || $2 == ($3 ",") || $2 == ($4 ",")) {
        if ($4 ~ /^-?[0-9]/) {
45      andi++
    #   andia[$4]++
      if ($3 ~ reg) {
        if ($4 >= 0 && $4 < 32) {
50      andi32++
        nextc()
      }
    }
  }
    if ($2 ~ reg && $3 ~ reg && $4 ~ reg) {
55      andaab++
      nextc()
    }
  }
    if ($2 ~ reg && $3 ~ reg && $4 ~ reg) {
60      andrrr++
      next()
    }
  }
}
$1 == "extb" {

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    if ($2 == ($3 ",")) {
        if ($2 ~ reg && $3 ~ reg) {
            extbr++
            nrtc()
5        }
    }
    nrt()
}
$1 == "extw" {
10    if ($2 == ($3 ",")) {
        if ($2 ~ reg && $3 ~ reg) {
            extwr++
            nrtc()
        }
    }
15    nrt()
}
$1 == "sexb" {
    if ($2 == ($3 ",")) {
20        if ($2 ~ reg && $3 ~ reg) {
            sexbr++
            nrtc()
        }
    }
25    nrt()
}
$1 == "sexw" {
    if ($2 == ($3 ",")) {
30        if ($2 ~ reg && $3 ~ reg) {
            sexwr++
            nrtc()
        }
    }
    nrt()
35 }
($2 == $3 || $2 == ($3 ",") || $2 == ($4 ",")) {
    if ($1 == "add" || $1 == "sub" || $1 == "and" || $1 == "or" || $1 == "xor" ||
$1 == "asl" || $1 == "asr" || $1 == "lsr") {
40     if ($2 ~ reg) {
        if ($2 == $3) {
            if ($4 ~ reg) {
                opaab[$1]++
                nrtc()
            }
        } else {
45         if ($3 ~ reg && $2 == ($4 ",")) {
            opaab[$1]++
            nrtc()
        }
    }
50 }
}
}
55 {
    nrt()
    # print $0
}
60 END {
    if (1) {
        OFS = "\t"
        # print "\nopaab"
    }
}

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    for (i in opaab) {
        if (i == "add" || i == "sub" || i == "and" || i == "or" || i == "xor" || i ==
"asl" || i == "asr" || i == "lsr") {
5         print i, opaab[i], int(opaab[i]*1000/NR)/10
        }
    }
    # print "\nldfpa"
    # for (i in ldfpa) print i, ldfpa[i]
    # print "\nstfpa"
10    # for (i in stfpa) print i, stfpa[i]
    # print "\nldr0a"
    # for (i in ldr0a) print i, ldr0a[i]
    # print "\nmovia"
    # for (i in movia) print i, movia[i]
15    # print "\naddia"
    # for (i in addia) print i, addia[i]
    # print "\nsubia"
    # for (i in subia) print i, subia[i]
    # print "\ncmpia"
20    # for (i in cmpia) print i, cmpia[i]

    for (i in calls) {
        # print i, calls[i]
        if (calls[i] > 1) {
25         calls2 += (calls[i]-2)
        }
        callsall += calls[i]
    }
    # print "callsall", callsall, int(callsall*1000/NR)/10
30    # print "calls2", calls2, int(calls2*1000/NR)/10

    # bl = calls2
    bl = bl - push
    b = b - pop
35    print "bl", bl, int(bl*1000/NR)/10
    # print "push", push, int(push*1000/NR)/10

    print "b", b, int(b*1000/NR)/10
    # print "pop", pop, int(pop*1000/NR)/10
40    print "beq", beq, int(beq*1000/NR)/10
    print "bgt", bgt, int(bgt*1000/NR)/10
    print "bhi", bhi, int(bhi*1000/NR)/10
    print "bpl", bpl, int(bpl*1000/NR)/10

45    print "stblink", stblink, int(stblink*1000/NR)/10
    print "jblink", jblink, int(jblink*1000/NR)/10
    print "jr", jr, int(jr*1000/NR)/10
    print "jlr", jlr, int(jlr*1000/NR)/10

50    print "movr", movr, int(movr*1000/NR)/10
    print "movf0r", movf0r, int(movf0r*1000/NR)/10
    print "movf0h", movf0h, int(movf0h*1000/NR)/10
    print "movrh", movrh, int(movrh*1000/NR)/10
    print "movhr", movhr, int(movhr*1000/NR)/10

55    print "cmprh", cmprh, int(cmprh*1000/NR)/10
    print "cmphr", cmphr, int(cmphr*1000/NR)/10
    print "cmpr", cmpr, int(cmpr*1000/NR)/10

60    print "cmpi64", cmpi64, int(cmpi64*1000/NR)/10
    print "cmpi64p", cmpi64p, int(cmpi64p*1000/NR)/10
    print "movi64", movi64, int(movi64*1000/NR)/10
    print "movi64p", movi64p, int(movi64p*1000/NR)/10

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print "addi32", addi32, int(addi32*1000/NR)/10
print "subi32", subi32, int(subi32*1000/NR)/10

5  print "addabi8", addabi8, int(addabi8*1000/NR)/10
    print "subabi8", subabi8, int(subabi8*1000/NR)/10

    print "subneaaa", subneaaa, int(subneaaa*1000/NR)/10
10  print "subeqaaa", subeqaaa, int(subeqaaa*1000/NR)/10

    print "subhhh", subhhh, int(subhhh*1000/NR)/10
    print "subaaa", subaaa, int(subaaa*1000/NR)/10
    print "subaab", subaab, int(subaab*1000/NR)/10
    print "subrrr", subrrr, int(subrrr*1000/NR)/10
15  print "addaab", addaab, int(addaab *1000/NR)/10
    print "addrrr", addrrr, int(addrrr *1000/NR)/10
    print "addrrh", addrrh, int(addrrh *1000/NR)/10

    print "asli8", asli8, int(asli8*1000/NR)/10
20  # print "asli32", asli32, int(asli32*1000/NR)/10
    print "aslab1", aslab1, int(aslab1*1000/NR)/10
    print "aslab2", aslab2, int(aslab2*1000/NR)/10
    print "aslaab", aslaab, int(aslaab*1000/NR)/10

25  print "asri8", asri8, int(asri8*1000/NR)/10
    # print "asri32", asri32, int(asri32*1000/NR)/10
    print "asrab1", asrab1, int(asrab1*1000/NR)/10
    print "asrab2", asrab2, int(asrab2*1000/NR)/10
    print "asraab", asraab, int(asraab*1000/NR)/10

30  print "lsri8", lsri8, int(lsri8*1000/NR)/10
    # print "lsri32", lsri32, int(lsri32*1000/NR)/10
    print "lsrab1", lsrab1, int(lsrab1*1000/NR)/10
    print "lsrab2", lsrab2, int(lsrab2*1000/NR)/10
35  print "lsraab", lsraab, int(lsraab*1000/NR)/10

    print "andi32", andi32, int(andi32*1000/NR)/10
    print "andfi32", andfi32, int(andfi32*1000/NR)/10
    print "andaab", andaab, int(andaab *1000/NR)/10
40  print "andfab", andfab, int(andfab *1000/NR)/10

    print "mul0ab", mul0ab, int(mul0ab *1000/NR)/10
    print "muli32", muli32, int(muli32 *1000/NR)/10

45  print "ldabc", ldabc, int(ldabc *1000/NR)/10
    print "ldbabc", ldbabc, int(ldbabc *1000/NR)/10
    print "ldwabc", ldwabc, int(ldwabc *1000/NR)/10
    print "ldr64", ldr64, int(ldr64 *1000/NR)/10
    print "ldr64p", ldr64p, int(ldr64p *1000/NR)/10
50  print "ldwr32", ldwr32, int(ldwr32 *1000/NR)/10
    print "ldbr16", ldbr16, int(ldbr16 *1000/NR)/10
    print "str64", str64, int(str64 *1000/NR)/10
    print "stbr8", stbr8, int(stbr8 *1000/NR)/10
    print "stwr16", stwr16, int(stwr16 *1000/NR)/10

55  print "ldrpc", ldrpc, int(ldrpc *1000/NR)/10
    print "addrpc", addrpc, int(addrpc *1000/NR)/10

    print "ldfp32", ldfp32, int(ldfp32*1000/NR)/10
60  print "stfp32", stfp32, int(stfp32*1000/NR)/10
    print "addfpi32", addfpi32, int(addfpi32*1000/NR)/10

    print "ldgp", ldgp, int(ldgp*1000/NR)/10

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print "stgp", stgp, int(stgp*1000/NR)/10

print "extbr", extbr, int(extbr*1000/NR)/10
5 print "extwr", extwr, int(extwr*1000/NR)/10
print "sexbr", sexbr, int(sexbr*1000/NR)/10
print "sexwr", sexwr, int(sexwr*1000/NR)/10

# print "movi", movi, "movi64", movi64, "movi128", movi128
# print "addi", addi, "addi32", addi32, "addi64", addi64, "addi128", addi128
10 # print "subi", subi, "subi32", subi32, "subi64", subi64, "subi128", subi128
    }
    }
    #function p(a, b) {
    # print "a", b, int(b*100/NR)
15 #}

#/(j|jl|b|bl)(ge|gt|le|lt|ne|eq|pl|mi|hi|hs|lo|ls)?\.d/ {
# stored = $0
# sub(/\.d/, "", stored)
20 # getline
# print $0
# print stored
# nextc()
#}
25 #
#{ print $0 }

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